

Oswaldo Cruz Foundation
Institute of Drug Technology Farmanguinhos
Research, Development and Innovation
Natural Products

MISSION

**Development of
pharmaceutical ingredients
from biodiversity**

**To attend demands of
Public Health**

**Emphasis on
neglected diseases and/or
diseases of great social impact**





Ministério da Saúde Fundação Oswaldo Cruz

Fiocruz

**a public complex created in 1900
oriented to R&D for the improvement of the health situation in the whole
country**

MAIN AREAS OF ACTIVITIES

2. PHARMACEUTICAL ASSISTANCE AND PRODUCTION

3. EDUCATION AND TRAINING

4. INFORMATION AND COMMUNICATION

5. HEALTH CARE

6. HEALTH SURVEILLANCE

7. HEALTH POLICY MANAGEMENT

8. INTERNATIONAL COOPERATION



Fiocruz

STAFF:

- > 12.000
- 1000 PhD

BUDGET:

- > USD 1 billion

Research: > 1,800 projects in process

Publications: > 1,000 papers per year

Teaching: > 5 thousand students

Production: > 110 million doses/vaccines
 > 3 million diagnostic kits
 > 4 billion medicines (units)



Institute of Drug Technology Farmanguinhos - FIOCRUZ

Medicines for the Unified Health System

- anti-inflammatories
- anti-infectives
- anti-ulcer drugs
- analgesics
- medicines for endemic diseases such as malaria and tuberculosis
- antiretroviral drugs for AIDS
- medicines for diseases of the cardiovascular system
- medicines for diseases of the nervous system



Production capacity for 10 billion medicines (units)



Farmanguinhos COVERAGE OF THE PRODUCTIVE CHAIN

The search for new therapeutic solutions begins with **basic research**, then through **applied research** and **technological development** until the stage of **production** is reached, strictly complying with all the **quality requirements** of national and international regulatory agencies.

MEDICINAL PLANTS: validation studies (agrobotanic, chemical-pharmaceutical, pharmacological, preclinical and clinical stages) and development of **phytopharmaceuticals, phytotherapeutic** and **phyto-derivative products**.

Natural Products R&D

- ❖ Herbal material identification
- ❖ Evaluation of activity
- ❖ Chemical composition and
- ❖ Characterization of the constituents of interest
- ❖ Seasonal variation of constituents
- ❖ Standardization
- ❖ Stability studies
- ❖ Preformulations

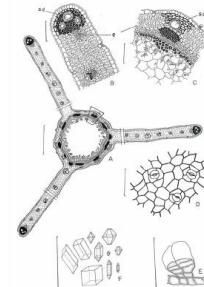
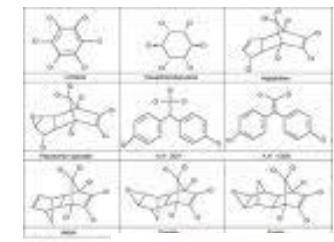


Figure 1: *Buccharis minima* (Less.) DC.



Farmanguinhos RD&I – Phytomedicines

Key Steps



Farmanguinhos RD&I – Therapeutic Targets

Doença Negligenciada

- Leishmaniose
- Malária
- Chagas

Câncer

- Leucemias
- Gliomas

Anti-inflamatório

- Doença autoimune
- Asma
- Cicatrizante
- Dor

Efeitos vasculares

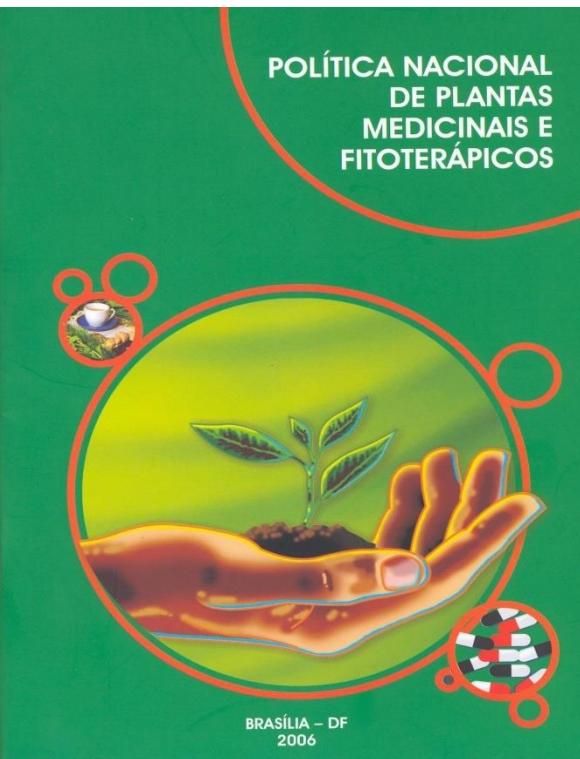
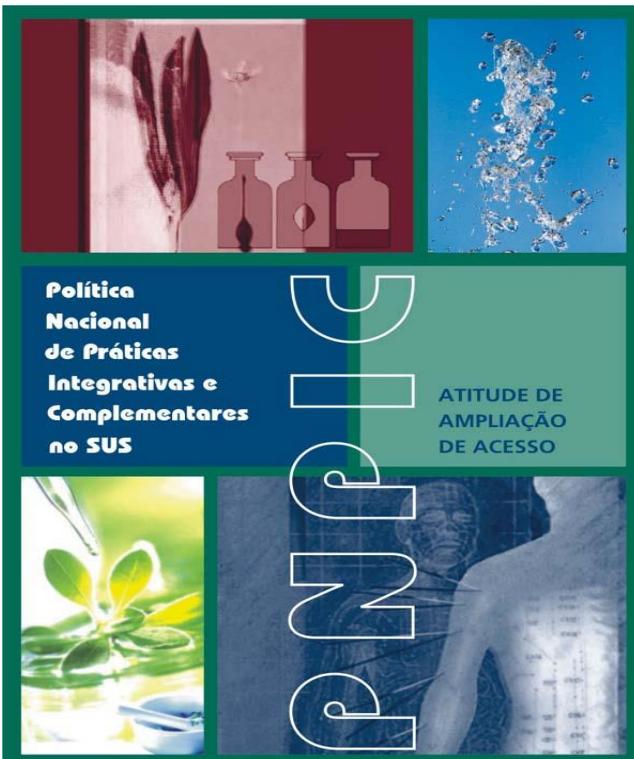
- Microcirculação cerebral e esquelética

Sistema digestório e excretor

- Fígado
- Renal

Public Policies for Medicinal Plants and Phytomedicines

- Incentive to the adoption of Phytotherapy in public health programs
- Incentive for R&D in relation to the use of medicinal plants and herbal medicines



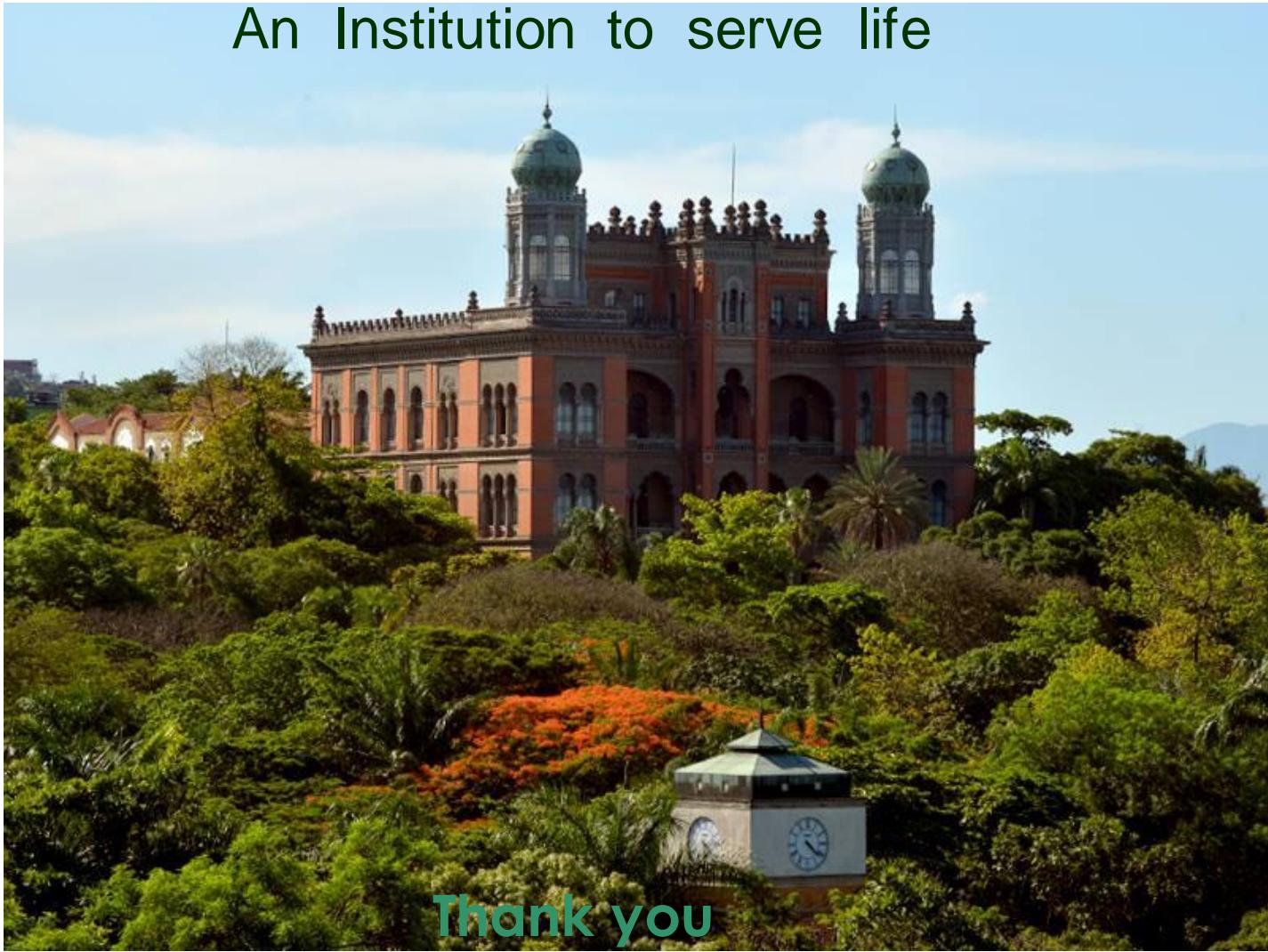
National Program of Medicinal Plants and Phytomedicines



- concerned with benefit distribution and environmental protection,
considering that clean technology production models are essential for conservation.
- Integrative projects are being devised taking into account also larger **scale production of herbal raw material (phytomedicines, nutraceuticals, cosmeceuticals, food, natural insecticides and other agrochemicals)**
- **Farmanguinhos/Fiocruz is ready to help with and discuss R&D contracts and cooperation programmes.**

Uma instituição a serviço da vida

An Institution to serve life



Thank you